

REMARKS

Claims 1, 2, and 4-7 are currently pending, wherein claim 3 has been canceled and claims 1, 2, 4, 6 and 7 have been amended to correct typographical and/or translation errors. Favorable reconsideration is respectfully requested in view of the remarks presented herein below.

In paragraph 2 of the Office action ("Action"), the Examiner rejects claims 3 and 4 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Application Publication No. 2002/0010579 A1 to Kitaoka et al. ("Kitaoka"). Claim 3 has been canceled, rendering this rejection moot with regard thereto. Regarding claim 4, Applicant respectfully traverses this rejection.

In order to support a rejection under 35 U.S.C. § 102, the cited reference must teach each and every claimed element. In the present case, Kitaoka fails to anticipate claim 4 for at least the reasons that Kitaoka fails to disclose a voice recognition index generator as claimed.

Claim 4 defines a voice recognition index generator. The generator includes, *inter alia*, a representative word selector that selects a single word as a representative word from an original set composed of a plurality of words; an acoustically similar word grouper that extracts from the original set, a word in which the acoustic likelihood between a sound feature vector for the word and a sound feature vector for the representative word is not less than a predetermined threshold, and includes the extracted word in the same group as the representative word; and an original-set replacer that passes to the representative word selector the word set left by removing from the original set the word affiliated by the group, and another original set to be processed by the representative word selector.

Kitaoka discloses a speech recognition apparatus that performs pattern matching between each reference pattern in a vocabulary and extracted characteristic parameters of input speech. The vocabulary is stored beforehand and includes the reference patterns corresponding to a word which should be identified. In addition, specific words in response to which the external device performs an operation which cannot easily be undone are selected from the vocabulary, and a similar sound group of the specific words are stored beforehand. A similar sound group includes the reference patterns corresponding to sounds which are similar to but different from that of a specific word. The pattern matching section selects as candidate words one or more words

corresponding to the reference patterns which have high similarities with the characteristic parameters as a result of the pattern matching. If the candidate word/words include a specific word, the speech signal is re-recognized using the similar sound group. More specifically, the pattern matching section performs pattern matching between each of the reference patterns in the similar sound group and the characteristic parameters of the speech signal. The pattern matching section outputs a word different from the specific word if one of the reference patterns corresponding to a word that sounds similar to that of the specific word has a higher similarity with the speech signal. (See ¶ [0010] of Kitaoka). However, nowhere in Kitaoka is there any disclosure of an original-set replacer that passes to the representative word selector the word set left by removing from the original set the word affiliated by the group, as another original set to be processed by the representative word selector.

Therefore, Kitaoka fails to anticipate claim 4 because Kitaoka fails to disclose an original-set replacer as claimed. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 4 under 35 U.S.C. § 102.

In paragraph 4 of the Action, the Examiner rejects claims 1, 5, and 7 under 35 U.S.C. § 103(a) as being unpatentable over Kitaoka in view of U.S. Patent Application Publication No. 2002/0111810 to Khan et al. ("Khan"). Applicant respectfully traverses this rejection.

In order to support a rejection under 35 U.S.C. § 103, the Examiner must establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness three criteria must be met. First, there must be some motivation to combine the cited references. Second, there must be reasonable expectation of success. Finally, the combination must teach each and every claimed element. In the present case, the combination of Kitaoka and Khan fails to render claims 1, 5, and 7 unpatentable for at least the reason that the combination fails to disclose each and every claimed element as discussed below.

Independent claim 1 defines a voice recognition device for a car navigation system. The device includes, *inter alia*, a sound analyzer; an acoustic-model storage; a sound-unit recognizer; a word-and-position information registration unit and a position-information searcher/outputter. In addition, the word-and-position information registration unit correlates and registers, in a

word-and-position information correlation dictionary, the sound-unit recognition candidate string and position information acquired from a main unit of the car navigation system.

As discussed above, Kitaoka discloses a speech recognition apparatus that performs pattern matching between each reference pattern in a vocabulary and extracted characteristic parameters of input speech. However, Kitaoka fails to disclose a word-and-position registration unit as claimed.

Khan discloses a navigation system that includes an automatic speech recognition program that matches spoken words that describe geographic features, such as places, street names, and the like, to entries in a work list. As the vehicle travels through a geographic area, the word list rebuilds to include entries that correspond to the named geographic features closest to the new current vehicle position. However, Kahn, like Kitaoka, fails to disclose or suggest a word-and-position registration unit.

In rejecting claim 1, the Examiner asserts that Kahn discloses a word-and-position information registration unit as claimed in as much as Kahn discloses that a navigation system with an automatic speech recognition program that matches spoken words with geographic features using a work list. However, nowhere in Kahn is there any disclosure or suggestion of correlating and registering in a word-and-position information correlation dictionary the sound-unit recognition candidate string and position information as claimed. At best, Kahn merely discloses matching a spoken word with a word list. Kahn fails to disclose that the spoken word or a candidate string matched from the spoken word is correlated and registered with position data as claimed.

Since Kitaoka and Kahn both fails to disclose or suggest a word-and-position information registration unit as claimed, the combination of these two references cannot possibly disclose or suggest said element. Therefore, even if one skilled in the art were motivated to combine Kitaoka and Kahn, which Applicant does not concede, the combination would still fail to render claim 1 unpatentable because the combination fails to disclose each and every claimed element.

Claim 5 depends from claim 1. Therefore claim 5 is patentable over the combination of Kitaoka and Kahn for at least those reasons presented above with respect to claim 1. Furthermore, independent claim 7 defines a voice recognition device for a car navigation system

that includes, *inter alia*, a word-and-position-information unit as defined in claim 1. Therefore, claim 7 is patentable over the combination of Kitaoka and Kahn for at least those reasons presented above with respect to claim 1. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1, 5, and 7 under 35 U.S.C. § 103(a).

In paragraph 5 of the Action, the Examiner rejects claims 2 and 6 under 35 U.S.C. § 103(a) as being unpatentable over Kitaoka, in view of Khan, further in view of U.S. Patent No. 6,192,337 to Ittycheriah et al. ("Ittycheriah"). Applicant respectfully traverses this rejection.

Claims 2 and 6 variously depend from independent claim 1. Therefore, claims 2 and 6 are patentable over the combination of Kitaoka and Kahn for at least those reasons presented above with respect to claim 1. Ittycheriah discloses an apparatus and method for rejecting confusable words during training associated with a speech recognition system. However, Ittycheriah fails to overcome the deficiencies of Kitaoka and Kahn.

Since Kitaoka, Kahn, and Ittycheriah, each fail to disclose or suggest a word-and-position information registration unit as claimed, the combination of these three references cannot possibly disclose or suggest said element. Therefore, even if one skilled in the art were motivated to combine Kitaoka, Kahn, and Ittycheriah, which Applicant does not concede, the combination would still fail to render claims 2 and 6 unpatentable because the combination fails to disclose each and every claimed element. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claims 2 and 6 under 35 U.S.C. § 103(a).

CONCLUSION

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Penny L. Caudle Reg. No. 46,607 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.147; particularly, extension of time fees.

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Respectfully submitted,

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